# Drought Modifies Effects of Predators and Parasitoids on the Goldenrod Gall Fly

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Restoration of ecological function to abandoned agricultural fields managed for forested ecosystems through, afforestation is an important objective of restoration activity. A little used metric of restoration success is the progress toward equilibrium of known predator-prey-parasitoid systems across the forest restoration site. This study on the Sharkey, Mississippi, USA, large scale restoration experiment took advantage of earlier work (Schiff and Hamel, this symposium) to assess the continuing development of the goldenrod gall fly-parasitoid-predator system toward a presumed equilibrium. Nine samples were taken from three areas on the site, at three distances from trees after the 2000 growing season. We assessed the fates of 1468 galls. The combination of reduced mean gall diameter (1998: 20.7 ± 0.04 mm, N=5055; 2000: 20.3 ± 0.08 mm, N=1468; T=4.32, p < 0.0001) with substantial mortality caused by factors other than predators or parasitoids implicates the effects of adverse weather (a severe drought occurred in summer 2000) on the development of the system. Presumably, the depression of woodpecker predation in 2000 relative to 1998 values was a secondary effect of drought.

Growing Season Rainfall, Stoneville, MS, USA
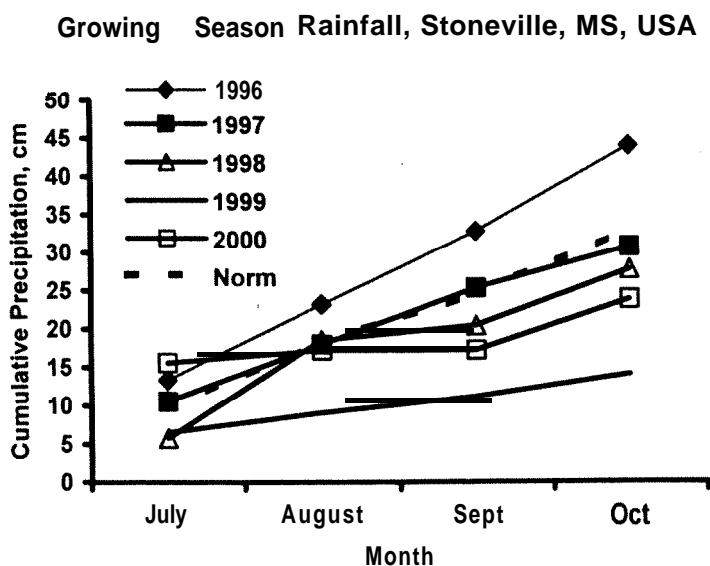
Fates of *E. solidaginis* galls at Sharkey Site, O-IO m from trees
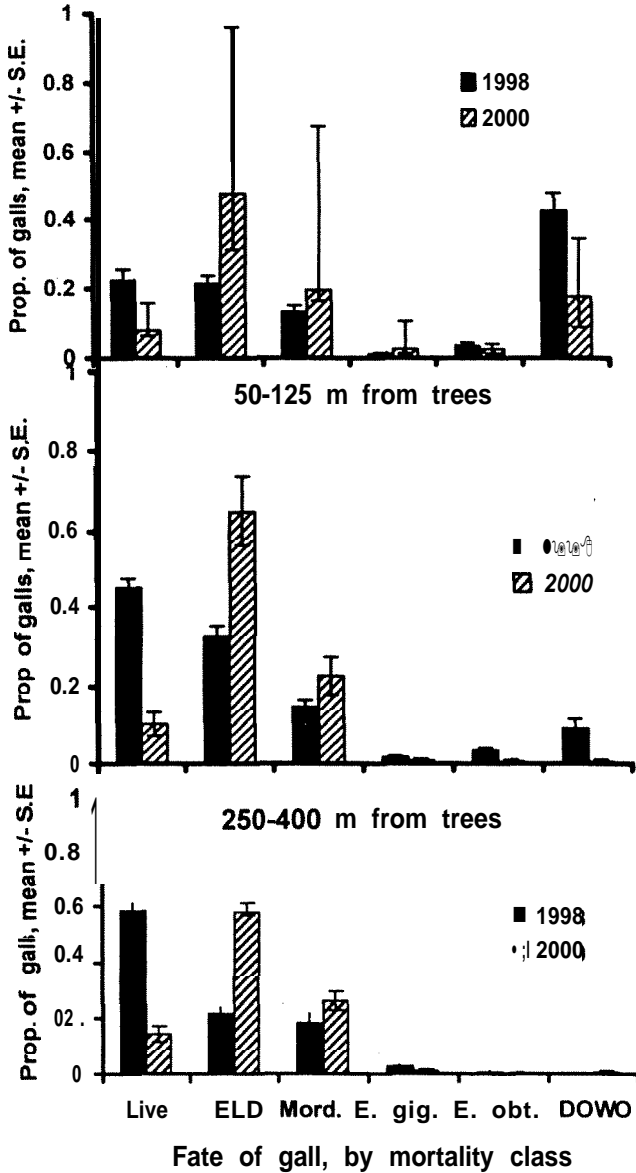
Fates include live larva or pupa (Live); Early Larval Death (ELD); or predation by *Mordellistena unicolor* (Mord.), *Eurytoma gigantea* (E. gig.), *E. obtusiventris* (E.obt.), or *Picoides pubescens* (DOWO).

Schiff, N. M. and Hamel, P. B. (This symposium):
    Goldenrod gall flies on Sharkey Site: If you build it they will come.